

CLAIMS

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1. A stabilizer bar comprising:
a fiber-reinforced composite rod comprising a plurality of fibers
embedded in a resin binder, said rod comprising first and second rod ends;
first and second arms, each arm comprising a respective recess,
each said recess receiving a respective one of the rod ends, said arms
secured to the respective rod ends at the respective recesses.

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2. A stabilizer bar comprising:
a fiber-reinforced composite rod comprising a plurality of fibers
embedded in a resin binder, said rod comprising first and second rod ends;
first and second metallic arms secured to the respective rod
ends;

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wherein the composite rod comprises a longitudinal axis, wherein the
fibers comprise first, second and third sets of fibers, wherein the fibers of the
first set are oriented at $0^\circ \pm 15^\circ$ with respect to the axis, wherein the fibers of
the second set are oriented at $+45^\circ \pm 15^\circ$ with respect to the axis, and wherein
the fibers of the third set are oriented at $-45^\circ \pm 15^\circ$ with respect to the axis.

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3. The invention of Claim 1 or 2 wherein the arms each comprise a
light-metal alloy.

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4. The invention of Claim 1 or 2 further comprising:
first and second clamps positioned at least partially around the
first and second rod ends respectively, said first and second clamps
positioned to abut the first and second arms, respectively, to limit axial
movement of the rod with respect to the clamps.

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(11) 5. The invention of Claim 1 wherein the rod is tubular, further
comprising first and second plugs positioned within the first and second rod
ends within the first and second recesses, respectively.

6. The invention of Claim 5 wherein the first and second plugs are integrally connected to the first and second arms, respectively.

7. The invention of Claim 5 wherein the arms are crimped over the respective rod ends to secure the arms to the rod.

5 8. The invention of Claim 1 wherein the composite rod comprises a longitudinal axis, wherein the fibers comprise first, second and third sets of fibers, wherein the fibers of the first set are oriented at $0^\circ \pm 15^\circ$ with respect to the axis, wherein the fibers of the second set are oriented at $+45^\circ \pm 15^\circ$ with respect to the axis, and wherein the fibers of the third set are oriented at $-45^\circ \pm 15^\circ$ with respect to the axis.

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9. The invention of Claim 8 or 2 wherein the fibers of the first, second, and third sets comprise more than 50% of all of the fibers in the composite rod.

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10 10. The invention of Claim 8 or 2 wherein the fibers of the first, second, and third sets comprise more than 75% of all of the fibers in the composite rod.

11. The invention of Claim 8 or 2 wherein the fibers of the first, second, and third sets comprise more than 95% of all of the fibers in the composite rod.

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12. The invention of Claim 1 wherein the composite rod comprises a longitudinal axis, wherein the fibers comprise first, second and third sets of fibers, wherein the fibers of the first set are oriented at $0^\circ \pm 10^\circ$ with respect to the axis, wherein the fibers of the second set are oriented at $+45^\circ \pm 10^\circ$ with respect to the axis, and wherein the fibers of the third set are oriented at $-45^\circ \pm 10^\circ$ with respect to the axis.

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13. The invention of Claim 1 wherein the composite rod comprises a longitudinal axis, wherein the fibers comprise first, second and third sets of fibers, wherein the fibers of the first set are oriented at $0^\circ \pm 5^\circ$ with respect to

the axis, wherein the fibers of the second set are oriented at $+45^\circ \pm 5^\circ$ with respect to the axis, and wherein the fibers of the third set are oriented at $-45^\circ \pm 5^\circ$ with respect to the axis.

5 14. The invention of Claim 1 or 2 wherein the fibers comprise

carbon fibers.

15 15. The invention of Claim 1 or 2 wherein the arms are each tapered from a larger cross-sectional area to a smaller cross-sectional area, said larger cross-sectional area disposed between the rod and the smaller cross-sectional area.

10 16. The invention of Claim 1 or 2 wherein the rod is tubular in shape.

15 17. The invention of Claim 2 wherein the fibers of the first set are oriented $0^\circ \pm 10^\circ$ with respect to the axis, wherein the fibers of the second set are oriented at $+45^\circ \pm 10^\circ$ with respect to the axis, and wherein the fibers of the third set are oriented at $-45^\circ \pm 10^\circ$ with respect to the axis.

20 18. The invention of Claim 2 wherein the fibers of the first set are oriented $0^\circ \pm 5^\circ$ with respect to the axis, wherein the fibers of the second set are oriented at $+45^\circ \pm 5^\circ$ with respect to the axis, and wherein the fibers of the third set are oriented at $-45^\circ \pm 5^\circ$ with respect to the axis.

25 19. A method for assembling a stabilizer bar, said method comprising:

(a) providing a fiber-reinforced composite rod comprising a plurality of fibers embedded in a resin binder, said rod comprising first and second rod ends;

(b) providing first and second arms, each arm comprising a respective recess;

(c) positioning each of the rod ends in a respective one of the recesses; and

(d) deforming each of the arms toward the respective rod end, thereby securing each arm to the rod.

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20. The method of Claim 19 further comprising positioning a respective plug in each rod end prior to (d), said plugs supporting the rod ends during the deforming act of (d).

21. The method of Claim 19 wherein (d) comprises radially crimping each of the arms toward the respective rod end.

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